

CELESTE C. GRYNBERG

IBLA 87-317

Decided November 14, 1989

Appeal from a decision of the Wyoming State Office, Bureau of Land Management, increasing rental for oil and gas lease W 74188.

Affirmed.

1. Oil and Gas Leases: Known Geologic Structure--Oil and Gas Leases: Noncompetitive Leases--Rules of Practice: Appeals: Burden of Proof--Rules of Practice: Evidence

A holder of a noncompetitive oil and gas lease who challenges a determination that her leased lands are within the known geologic structure of a producing oil or gas field has the burden of proving that determination to be incorrect.

2. Oil and Gas Leases: Known Geologic Structure--Oil and Gas Leases: Noncompetitive Leases--Rules of Practice: Appeals: Burden of Proof--Rules of Practice: Evidence

Where the Secretary's technical expert has made a reasoned analysis of available geologic data, the Secretary is entitled to rely on that opinion, absent a showing of error by a preponderance of the evidence.

3. Oil and Gas Leases: Known Geologic Structure--Oil and Gas Leases: Rentals

Where it is determined that lands in a noncompetitive oil and gas lease are within an undefined addition to a known geologic structure, the lessee is required to pay an increased rental of \$2 per acre for the entire lease.

APPEARANCES: Celeste C. Grynberg, pro se; Lowell L. Madsen, Esq., Office of the Regional Solicitor, U.S. Department of the Interior, Denver, Colorado, for the Bureau of Land Management.

OPINION BY ADMINISTRATIVE JUDGE ARNESS

Celeste C. Grynberg filed a simultaneous oil and gas lease application for parcel WY 1436 in the January 1981 simultaneous oil and gas filings. Her application was selected with first priority, and effective November 1, 1982, she was issued noncompetitive oil and gas lease W 74188, for 40 acres more or less, in sec. 8, NW¹ SW¹, T. 40 N., R. 70 W., sixth principal meridian, Converse County, Wyoming. To conform to a supplemental survey approved by the Bureau of Land Management (BLM), the description of the leased land was amended by a BLM decision dated October 18, 1985, to reflect that it consisted of 39.18 acres of land situated in lot 12 of the NW¹, SW¹ of sec. 8, T. 40 N., R. 70 W., sixth principal meridian, Converse County, Wyoming.

On February 15, 1984, the Wyoming State Director was advised by the BLM District Manager, Casper, Wyoming, that the lands embraced by W 74188 had been included within an undefined addition to the Dennell Draw undefined known geological structure (KGS), a structure defined by 43 CFR 3100.0-5(a) as "the trap in which an accumulation of oil and gas has been discovered by drilling and determined to be productive, the limits of which include all acreage that is presumptively productive." On December 22, 1986, BLM issued a decision informing Grynberg that, effective beginning with the lease year starting 30 days following receipt of notice, the annual rental for the subject lease would increase to \$2 per acre through the fifth lease year. Grynberg timely appealed BLM's December 22, 1986, decision and challenges the extension of the Dennell Draw KGS to the acreage encompassed by her lease, W 74188.

The geologist's report explaining the Dennell Draw KGS determination stated, pertinently:

The Dennell Draw KGS has been expanded due to a field study and the December 30, 1981, completion in HPC's well No. 1-36 for 80 BOPD [barrels of oil per day] and 95 MCFGPD [million cubic feet of gas per day] from the Upper Cretaceous Turner sandstone interval 9451 to 9461 feet. The field is a northwest-southeast trending Turner Sandstone oil and gas reservoir. The productive horizon appears to be an encased sand stratigraphic trap, with porosity and permeability pinching out in all directions from the central area of the reservoir. The Turner net-pay isopach was constructed using a bulk density cut-off of 2.5 gm/cc, where the resistivity was at least 15 ohm-m²/m and the Turner zone was present. There was no indication of an oil-water contact. The new KGS includes all 40 acre subdivisions cut by the two foot line on the Turner net pay isopach. The two foot line was picked as the productive limit because there is not yet proven production or shows below three feet of net pay as indicated in Davis Oil's well No. 1 (SW¹NE¹, sec. 27, T. 41 N, R. 71 W).

The record includes a geologist's isopach map depicting the Dennell Draw KGS trending in a northwest by southeast direction. Appellant's lease, situated in sec. 8, lies at the southeast extremity of the KGS. Sec. 17 and

a portion of sec. 18, also within the extended KGS, lie south of appellant's lease. The HPC well in the SE[^] NW[^], sec. 36, T. 41 N., R. 71 W., mentioned by the geologist's report, lies in 5 feet of net-pay sandstone as shown on BLM's isopach map.

Grynberg argues that BLM's KGS determination is not based on sound geological evidence, and that BLM's KGS designation of her leased acreage during the primary lease term was a breach of her lease contract. She challenges BLM's interpretation of the relevant isopach maps, and questions BLM's finding that there was no indication of an oil-water contact point on land included in the extension of the Dennell Draw KGS.

Referring to exhibit 2 to her statement of reasons (SOR) depicting the Turner net-sand isopach, Grynberg observes that in three instances, BLM drew the zero sand limit, which established the outer limit of the KGS, within one-half to three-quarters of a mile away from the nearest producing well. In contrast, Grynberg contends, the zero sand limit is drawn a distance of 3-3/4 miles southeast of the Turner well in sec. 1, T. 40 N., R. 71 W. The extension of the southeast contour of the KGS 3-3/4 miles, rather than one-half to three-quarters miles, she contends, was erroneous and adversely affects her lease by including it within the KGS. Grynberg submits that BLM should have drawn the outer contour of the reservoir consistent with a notion that the zero sand limit lies with one-half to three-quarters of a mile southeast of the Turner well (the nearest data control point in the KGS), leaving her acreage beyond the zero contour, and therefore outside the KGS.

Moreover, Grynberg contends that her interpretation is consistent with data from two wells in secs. 9 and 28, at locations southeast of her acreage, also found to lack Turner sandstone porosity by BLM. This, she contends, supports her thesis that there is no geological evidence justifying the presumption that her acreage is productive (SOR at 2).

BLM's geologist responds that his interpretation of the available geologic data is consistent with conditions proven in similar Turner sandstone reservoirs in the area. As an example, he has submitted a copy of a map of the Teckla KGS, a similar Turner sandstone stratigraphic reservoir lying three-quarters to 2 miles northeast of the Dennell Draw KGS. He explains that the "[n]earby Turner reservoir is approximately 20 miles in length and has the same northwest-southeast trend exhibiting a relatively uniform thickness and shape" (Answer of R.E. Wymer, dated Jan. 29, 1987, at 1). Geologist Wymer states that the size and shape of the nearby Teckla reservoir is analogous to the size and shape of the Dennell Draw KGS. He argues that this interpretation that wells used as control points in secs. 9 and 28 lack Turner porosity (there is zero feet or no sand shown) and that his "interpretation of the Turner reservoir limits does not violate these control points and came no closer than 1/4 mile from either" (Answer at 2).

Grynberg replies that, although the Teckla KGS map supports her contention the KGS reservoir is elongated, the trend terminates very abruptly. She observes the northwest terminus of the reservoir declines from 2 feet of pay to zero feet of pay in approximately three-quarters of a mile.

Likewise, she would find the southeast terminus declines from 1 foot of pay to zero in a half a mile. In the Dennell Draw KGS, she argues, the last control point for calculating the southeast terminus of the field is the NCRA well in sec. 1 with 5 feet of reservoir sandstone. The nearest well providing usable data southeast of this producer, according to Grynberg, is a dry hole 4 miles away in sec. 28 with zero porosity.

Grynberg continues to argue in her Response to Answer (Reply) that BLM erroneously set the boundary of the Dennell Draw KGS 3-3/4 miles southeast of the NCRA producer. Comparing the Dennell Draw KGS to the Teckla KGS, she questions whether a dry hole in sec. 28 should be compared with a point in sec. 17 approximately a half a mile from the outer contour of the Teckla KGS or a point "B" which she has identified, on maps supplied with her SOR and Reply, as some distance from the nearest "reservoir well" (dry hole) in sec. 21 in the Teckla KGS. This control point would be one-quarter to a half a mile from the dry hole in sec. 28, or a possible point "C" location some several miles away from the dry hole in sec. 28. Grynberg concedes that there is well data justifying the Teckla KGS determination, but contends that the Dennell Draw KGS lacks sufficient similar data controls to justify an extension 3-3/4 miles beyond the nearest producing well. She urges that the extended KGS boundaries should be modified, consistent with the Teckla determination, until additional well data is developed to permit further expansion.

[1] If the NCRA 551 well, the last control point from which BLM extended the Dennell Draw KGS, had exhibited a net-pay thickness of 1 or 2 feet there might be some merit to appellant's contention that BLM should not have extended the outer contour of the KGS more than a half to three-quarters of a mile beyond that point. BLM's last data control point on the southeast contour of the Dennell Draw reservoir is the NCRA 551 well in sec. 1, lying north of appellant's acreage in sec. 12. The Dennell Draw KGS isopach map reveals that NCRA 551 produced from the stratigraphic reservoir exhibiting a net-pay thickness of 5 feet. Isopach maps of the Dennell Draw and Teckla reservoir do not exhibit abrupt declines from 5-foot net-pay sand to zero net-pay sand in distances of three-quarters or one-half mile. Rather, maps of both reservoirs depict a gradual thinning of net-pay sandstone from 5 to 2 feet. Only after reaching 1 or 2 feet of net-pay sandstone do the maps display an abrupt decline in reservoir thickness to zero feet of sand within a distance of three-quarters or one-half mile. Therefore, assuming BLM's last well used to control KGS determination in the Dennell Draw is characterized by 5 feet of net-pay rather than 1 or 2, one would not expect an abrupt termination of the trend in net-pay thickness to zero within three-quarters or one-half mile as urged by appellant.

BLM's determination of this question is consistent with gradual outward thinning of the net-pay sandstone from the center of the reservoir, a condition consistent with available geologic data, which is unquestioned. BLM's depiction of the outer contours of the Dennell Draw reservoir is consistent with other portions of the Dennell Draw KGS shown on BLM's isopach map, and with the Teckla KGS isopach map. Consequently, Grynberg's arguments on this point lack persuasive effect, because they fail to draw upon

parallel circumstances in the data relied upon. By accepting BLM's data, Grynberg has so limited her arguments that they fail, because the data she relies upon does not support her conclusion. Where, as here, there is a reasoned analysis by BLM of available geologic data, the Secretary properly relies upon such opinion in the absence of showing of error by a preponderance of evidence. Bender v. Clark, 744 F.2d 1424 (10th Cir. 1984); John R. Stamper, 110 IBLA 130 (1989). Grynberg's arguments on this issue must be rejected.

[2] Grynberg also disputes BLM's finding that there was no indication of an oil-water contact point in the Dennell Draw field. Citing petroleum information production statistics and current activity in the area as reported by petroleum reports, Grynberg contends that no wells are currently producing in the field and that water has been produced by all the producing wells. She argues that contraction, rather than expansion, of this KGS is indicated by the available data, given that production of water indicates an oil-water contact in the field (Reply at 2). Finally, she questions the statement by BLM's geologist that there is "a good percentage of water associated with the oil in the reservoir," arguing that this circumstance establishes the existence of an oil-water contact in the reservoir, the effect of which would be to exclude her lease from the KGS.

BLM's geologist explains that, in the Dennell Draw field, "oil within the reservoir quality of rocks is contained within porosity which also contains a high percentage of water" (Rebuttal Answer by R.E. Wymer at 1). He explains further that this water "does not vary much across the entirety of the field" (Rebuttal at 1). Wymer distinguishes the presence of concentrations of water in a formation which also contain hydrocarbons from what is defined as an "oil-water contact point," by explaining that the oil-water contact is the "boundary surface between an accumulation of oil and the underlying bottom water." He reiterates that he has not seen any evidence of such a feature at Dennell Draw (Rebuttal at 1).

There is a distinction between a formation that produces oil associated with water and proof that an oil-water contact point has been detected. The oil-water contact is an important factor in defining the limits of an oil reservoir. An oil-water contact point or oil-water contact line is the line of demarcation between the water zone and the oil zone in a petroleum reservoir. Below that point, there are no hydrocarbons. Appellant appears to be confusing this term with a production "oil-water ratio" which is "the relation between the volume of oil and the volume of water produced from a well." Williams and Meyers, "Oil and Gas Law Manual of Terms" at 650 (1987). These two terms are not synonymous. Geological structures throughout the country produce varying concentrations of water associated with the production of oil. Relative differences in water concentrations may well effect the relative ease and expense of oil production. However, the existence of a relatively high oil-water ratio, alone, does not justify finding that there is no producing structure underlying Grynberg's acreage.

Except that she has pointed to production of water associated with production of oil in Dennell Draw, Grynberg has offered no geological evidence to show the location of an oil-water contact point. Nor has she demonstrated that the production of oil associated with water in the Turner sandstone shows her acreage is unproductive. The burden to show that such a condition exists as alleged lies with Grynberg; in this instance also, she has failed to demonstrate that the KGS determination appealed from is in error. Her arguments must be rejected as a consequence. Bender v. Clark, *supra*; John R. Stamper, *supra*.

[3] Grynberg alleges that BLM's KGS classification of her leased land during the primary term constitutes a breach of the lease. She has, however, submitted no authority in support of this position. Her contention is refuted directly by 43 CFR 3103.2-2(d) (1984), which provided:

(d) On lands within a lease issued under Subpart 3111 of this title after the effective date of this regulation which is later determined to be within a known geologic structure outside of Alaska or a favorable petroleum geological province in Alaska, the annual rental shall be \$2 per acre or fraction thereof beginning with the first lease year after the expiration of 30-days notice to the lessee. During the first 5 years of the lease term, the same rental increase is applicable to leases issued under Subpart 3112 of this title.

Where BLM determines that any part of the land described in the noncompetitive oil and gas lease is within an undefined addition of a KGS, the lessee is required to pay an increased rental of \$2 per acre for the entire lease. Lewis & Clark Exploration Co., 97 IBLA 171 (1987); Eagle Exploration Co., 83 IBLA 354 (1985).

Accordingly, pursuant to the authority delegated to the Board of Land Appeals by the Secretary of the Interior, 43 CFR 4.1, BLM's decision is affirmed.

Franklin D. Arness
Administrative Judge

I concur:

Gail M. Frazier
Administrative Judge